



US009543391B2

(12) **United States Patent**
Hwang et al.

(10) **Patent No.:** US 9,543,391 B2
(45) **Date of Patent:** Jan. 10, 2017

(54) **HIGH ELECTRON MOBILITY TRANSISTOR HAVING REDUCED THRESHOLD VOLTAGE VARIATION AND METHOD OF MANUFACTURING THE SAME**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 55 days.

(21) Appl. No.: **13/517,815**

(22) Filed: **Jun. 14, 2012**

(65) **Prior Publication Data**

US 2013/0099285 A1 Apr. 25, 2013

(30) **Foreign Application Priority Data**

Oct. 19, 2011 (KR) 10-2011-0107057
Jun. 1, 2012 (KR) 10-2012-0059433

(51) **Int. Cl.**

H01L 29/20 (2006.01)
H01L 29/423 (2006.01)

(Continued)

(52) **U.S. Cl.**

CPC **H01L 29/2003** (2013.01); **H01L 29/1029** (2013.01); **H01L 29/1608** (2013.01);
(Continued)

(58) **Field of Classification Search**

CPC H01L 29/66462; H01L 29/7787; H01L 29/4236; H01L 29/0847; H01L 29/518; H01L 29/0619; H01L 29/105; H01L 29/7786

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(57) **ABSTRACT**

According to example embodiments a transistor includes a channel layer on a substrate, a first channel supply layer on the channel, a depletion layer, a second channel supply layer, source and drain electrodes on the first channel supply layer, and a gate electrode on the depletion layer. The channel includes a 2DEG channel configured to generate a two-dimensional electron gas and a depletion area. The first channel supply layer corresponds to the 2DEG channel and defines an opening that exposes the depletion area. The depletion layer is on the depletion area of the channel layer. The second channel supply layer is between the depletion layer and the depletion area.

15 Claims, 20 Drawing Sheets

